

51 — Proc. Davenport acad. sci., IX, 1902). At Mr. Scudder's request I have just examined the species concerned and find that the first described is a short-winged *Arethaea* closely allied to *A. curita* Scudd., (First list orth. New Mex., p. 52) and consequently becomes

A. brevicauda. The New Mexican species is a true *Dichopetala* but a change in the specific appellation is necessary and *brevihastata* (a name suggested by and to be credited to Mr. Scudder) may take its place.

A. P. MORSE.

GROUP CHARACTERISTICS OF SOME NORTH AMERICAN BUTTERFLIES — II.

BY SAMUEL H. SCUDDER, CAMBRIDGE, MASS.

Subfamily EUPLOEINAE.

Mature caterpillar: Head smooth, uncrowned. Body cylindrical, tapering anteriorly, naked, but provided with a greater or less number of lateral ranged fleshy protuberances or filaments, never with spines, and gaily and brightly colored, generally with transverse stripes. Feeds almost exclusively on Asclepiadaceae and Solenaceae. *Chrysalis*: With no conspicuous prominences, all the part rounded, the thorax and abdomen generally not deeply separated, the appendages not raised above the general curve of the body, the abdomen plump, or with some portion of the body specially plump.

Tribe LIMNAINI.

Butterfly: Males provided on hind wings with one or more spot-like pockets concealing androconia, or a surface patch or patches of androconia (wanting in

some paleogean genera), but no rows of erect hairs. Females with short and club shaped fore tarsi. *Egg*: (Distinction from Ithomyini not known) *Caterpillar at birth*: Some of the body segments provided, besides the ranged bristles, with low roughened tubercles. *Mature caterpillar*: Body furnished with slender and filamentous appendages; otherwise naked; markings mostly transverse. Feeds on Asclepiadaceae. *Chrysalis*: Dorsally very tumid at about the third abdominal segment, often transversely ridged in this part; markings not unusually prominent.

Synopsis of the genera.

1. ANOSIA. *Butterfly*: Cell of fore wing nearly three fifths, of the hind wing about two thirds, as long as the wing. No spots in the middle of median interspaces of fore wings. *Egg*: Half or less than half as high as broad, with more

than twenty vertical ribs nearly all reaching the summit. *Caterpillar at birth*: Ranged appendages simple tapering hairs not half so long as segments; a pair of papilliform naked tubercles on second thoracic and eighth abdominal segments. *Mature caterpillar*: With a pair of long fleshy filaments on the same segments but not on second abdominal segment. *Chrysalis*: Ocellar tubercles slight and but little prominent; semicircle of mammilate points on third abdominal segment in a horizontal series when pendant.

2. *TASITHA*. *Butterfly*: Cell of fore wings hardly more than one half, of the hind wings less than three fifths, as long as the wings. A series of white spots in the middle of median interspaces of fore wings. *Egg*: Unknown. *Caterpillar at birth*: Unknown. *Mature caterpillar*: With a pair of long fleshy filaments on the second thoracic and second and eighth abdominal segments, *Chrysalis*: Ocellar tubercles rather prominent; semicircle of mammilate points on third abdominal segment in an oblique series when pendant.

Anosia Hübner.

Butterfly: Palpi moderately stout, densely clothed with long hairs to the tip; club of antennae twice as stout as stem. Discoidal cell relatively long, in the fore wings nearly three fifths, in the hind wings about two thirds as long as the wing; fore wings with produced apex so that the wing is twice as long as broad, the cell much longer above than

below. *Egg*: Half as high again as broad, or slightly less, rapidly tapering to a rounded summit, with over twenty not very prominent vertical ribs most of which reach the summit, and numerous straight and delicate transversals forming quadrangular cells. Laid singly. *Caterpillar at birth*: Subdorsal and supralateral appendages anterior, lateral and infrastigmatal posterior, and laterostigmatal median, none half as long as segments; on second thoracic and eighth abdominal segments a pair of lateral naked tubercles. *Mature caterpillar*: A pair of long fleshy filaments on the second thoracic and eighth abdominal segments (but none on second abdominal), the hindmost but little longer than the segment. *Chrysalis*: Stout and rounded, the ocellar tubercles slight and not very prominent, the semicircle of raised points on third abdominal segment horizontal when pendant. (*ἀνόσιος*, unholy, in reference to its color?)

A. plexippus Linn. (*Danaïs archippus* Auct., *Pap. crippus* Cram.). *Butterfly*: Wings bright tawny brown, paler on the under surface of the hind wings, the veins all marked with black and both costal and outer margins broadly bordered with black, sprinkled with white dots; besides the whole apex of the fore wings is more or less deeply black but enlivened by two or three dull tawny interspaceal subapical spots and by a couple of parallel series of large white or buff spots crossing the apex beyond the cell, the outer only crossing the wing. Expanse 100 mm. *Egg*: Pale amber green; vertical ribs twenty-two in number, intervals smooth and glistening. Height 1.2 mm. *Caterpillar at birth*: Head piceous. Body pale

green, slightly infuscated on anterior border of the segments; ranged appendages black; tubercles of second thoracic and eighth abdominal segments fuscous; a piceous latero-dorsal blister on first thoracic segment. Length 3 mm. *Mature caterpillar*: Head yellow with piceous arched bands. Body transversely banded with more or less interlocking bands of white, black, and lemon yellow; spiracles piceous; filaments black. Length 45 mm. Feeds on various species of *Asclepias* but especially *A. cornuti* and has been found also on *Acerates* and even on *Apocynum*. *Chrysalis*: Delicate pea green, tubercles gilt, but those of third abdominal segment set in a tricolored band, shining piceous in front, gilt behind and nacreous between, the last two dividing the tubercles. Length 27 mm.—The entire United States and southern Canada from Atlantic to Pacific, but believed to winter in the more southern portions and annually to migrate north, breeding beyond as well as within its natural region, returning south in the autumn in swarms. At least double brooded in the

south. Wintering as a butterfly, on the wing all summer.

Tasitia Moore.

Butterfly: Palpi moderately slender, thinly clothed with hairs and scales; club of antennae less than twice as stout as stem. Discoidal cell relatively short, in the fore wings hardly more than one half, in the hind wings less than three fifths the length of the wing; fore wings less produced, being less than twice as long as broad, the cell no longer above than below; androconial pouch of hind wings larger than in *Anosia*. *Egg*: Unknown. *Caterpillar at birth*: Unknown. *Mature caterpillar*: With a pair of long fleshy filaments on the second thoracic, second and eighth abdominal segments, in all cases much longer than the segments.

LIFE HISTORIES OF NORTH AMERICAN GEOMETRIDAE.—XXXIV.

BY HARRISON G. DYAR, WASHINGTON, D. C.

Deilinia quadraria Grote.

Egg. Elliptical, the large end strongly, a little obliquely truncate, the other flattened depressed; truncate end convex in the center. Reticulations linear, narrow, slightly raised, arranged in straight rows the length of the egg or very slightly spiralled, alternated, so that the parallel lines are waved; just at the edge of the truncation the reticulations become small, sharp ridges. Truncate end smooth, obscurely reticulate. Light blue-green; size .9 x .55 x .4 mm.

Stage I. Head rounded, reddish luteous, the pointed mouth brown; slightly bilobed,

free, nearly erect. Body moderate, normal, uniform, smooth, whitish; a rather broad purple brown dorsal stripe, roundedly diffuse at the ends and a similar subventral one on joints 2 to 13, narrowly diffuse at the ends, segmentarily submaculate in darker. Feet whitish, normal; tubercles and setae obsolete.

Stage II. Head rounded, bilobed, with small shield-shaped clypeus, free, erect; whitish, dotted mottled in purple gray, but leaving a pale, erect streak on each lobe. Body slender, rapidly vibrant before looping; whitish, opaque; dorsal stripe broad, purple